



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/640,343	08/12/2003	Toshifumi Honda	16869P-078200US	7711

20350 7590 01/22/2007
TOWNSEND AND TOWNSEND AND CREW, LLP
TWO EMBARCADERO CENTER
EIGHTH FLOOR
SAN FRANCISCO, CA 94111-3834

EXAMINER

BALI, VIKKRAM

ART UNIT	PAPER NUMBER
----------	--------------

2624

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/22/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/640,343

Applicant(s)

HONDA ET AL.

Examiner

Vikkram Bali

Art Unit

2624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>8/12/2003</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mizuno (US 6047083).

With respect to claim 1, Mizuno discloses a method for inspecting defects of a product having a plurality of product units (see Abstract) that comprises:

obtaining an image of product units (see figure 1, product 5 is imaged, col. 3, lines 57-62);

Art Unit: 2624

detecting regions of image having an appearance which differs from an expected appearance (see figure 3, numerical 11);

calculating feature amounts for the detected regions, classifying the detected regions into groups of defect candidates each having similar appearances (see figure 7, and figure 3 numerical 12);

forming an aggregate of the feature amounts of the detected regions (see figure 7 the defects are aggregated by the number of defects in the regions col. 7, lines 34-36);

determining each product unit attributes for the detected regions by comparing the feature amounts of the detected regions belonging to each group of defect candidates with a distribution of the aggregated of the feature amounts for the group of defect candidates, (see figure 7, and col. 7, lines 30-45, the densities of the defects on the wafer).

However, he fails to explicitly disclose the attributes including a broad classification of the detected regions based on whether the detected regions belonging to each group are genuine defects, as claimed. But, Mizuno in col. 7, lines 45-65 determined a degree of criticalness in order to find a killer defect regions, this statement does make an ordinary skilled in the art at the time of invention of use the suggestion to make this method and find the genuine defects from the candidate defects as claimed in the claim. With respect to claim 2, he further discloses the expected appearance is an appearance of an ideal pattern for the product, (see figure 3, numerical 11, compare image with reference image) as claimed.

Art Unit: 2624

With respect to claim 3, he fails to explicitly disclose expected appearance is an appearance of a reference pattern which is determined by comparing the appearances of different product units of the product, as claimed. But, it is well known in the field of inspection to find or to update a reference pattern in order to compare the test images to get a better yield. Therefore, it will be obvious to one ordinary skilled in the art at the time of invention to use the well-known feature to get the better yield in the inspection process.

With respect to claim 4, he further discloses the feature amounts of each detected region comprise defect elliptical approximation size, (see col. 5, lines 8-10) as claimed.

With respect to claim 5, he fails to explicitly disclose defects candidates in a group are not genuine candidates if the number of product units having the defect candidates at corresponding identical locations or adjacent locations in the group is larger than a preset value. But, it is a design choice to use a threshold values in order to find a group of defects or single defect being a genuine defect or not a genuine defect by comparing that defect with the threshold and assigning the candidate defect as a genuine defect if the defect is more or less [as preset] from the threshold. Therefore, it would have been obvious to one ordinary skilled in the art at the time of invention to simply use the experiments in order to find a threshold and preset that in order to find if the defect is genuine or not.

With respect to claim 6, he further discloses determining attributes for the detected regions comprises performing a sub-classification of the genuine defects identified in

Art Unit: 2624

the broad classification into different types of genuine defects, (see figure 7, defects are sub-classified as the size of the defects) as claimed.

Claims 7-9 are rejected for the same reasons as set forth for the claim 1, as claims 7-9 are claiming similar subject matter as claimed in claim 1.

With respect to claim 10, he further discloses identifying genuine defects from the defect candidates comprises determining the criteria corresponding to the groups by using information on feature amounts of the defect candidates belonging to the separate groups, (see figure 7, the table sets up the criteria as the size of the defect and then finally gives the density of the defect in order to get the killer defect) as claimed.

With respect to claim 11, he further discloses forming an aggregate of the feature amounts of the defect candidates in the plurality of sample regions in the sample, for each of the groups of defect candidates; and comparing the feature amounts of the defect candidates belonging to each group with a distribution of the aggregate of the feature amounts for the group of defect candidates, (see the table in figure 7, the number of defects are aggregated per the size of the defects and then they are calculated in order to find the density of the defects to get to the killer defects) as claimed.

Claim 12 is rejected for the same reasons as set forth for the claim 4, as claim 12 is claiming similar subject matter as claimed in claim 4.

With respect to claim 13, he further discloses classifying the genuine defects into different types of genuine defects, (see table 7, the defects are further classified in to the defects depending upon the size of the defects genuine defects) as claimed.

Art Unit: 2624

With respect to claim 14, he further discloses displaying the genuine defects and defect candidates, (see figure 1, A, numerical 9 the display).

With respect to claim 15, he further discloses revising the criteria used to identify genuine defects from the defect candidates; and then identifying, for each of the divided groups, genuine defects from the defect candidates by using the revised criteria, (see table in figure 7, there are different criteria as seen by the table i.e. the sizes of the different defects).

Claim 16 is rejected for the same reasons as set forth for the claim 14, as claim 16 is claiming similar subject matter as claimed in claim 14.

Claims 17-20, and 21-29 are rejected for the same reasons as set forth in the rejections of the claims 7-16, because claims 17-20 and 21-29 are claiming similar subject matter as claimed in claims 7-16.

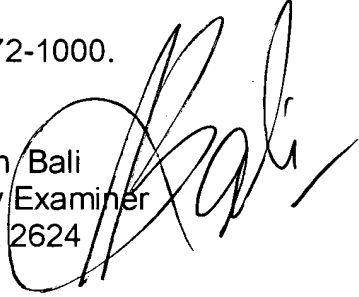
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vikkram Bali whose telephone number is 571.272.7415. The examiner can normally be reached on 7:00 AM - 3:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella can be reached on 571.272.7778. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2624

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Vikkram Bali
Primary Examiner
Art Unit 2624



vb
January 17, 2007